MULTIMEDIA UNIVERSITY

STUDENT IDENTIFICATION NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2019/ 2020

BPO2864 PRODUCTION AND OPERATIONS MANAGEMENT

(Distance Education)

6th MARCH 2020
9.00 a.m to 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This Question paper consists of 4 pages, excluding the cover page.
2. Answer **ALL** questions. All questions carry equal marks.
3. Answers should be written in the Answer Booklet provided.

Answer ALL questions. All questions carry equal marks. **(5 x 20 = 100 marks)**

Question 1

a. Lillian Fok is the president of Lakefront Manufacturing, a bicycle tyre manufacturer. Fok makes 1000 tyres per day with following resources:

Labour: 400 hours per day at RM12.50 per hour
Raw material: 20000 kg per day @ RM1 per kg
Energy: RM5000 per day
Capital costs: RM10000 per day

i. What is the labour productivity per labour-hour for these tyres at Lakefront Manufacturing? (5 marks)

ii. What is the multifactor productivity? (5 marks)

b. There are three primary ways to achieve competitive advantage. What are they? Explain them with one example each. (10 marks)

Question 2

a. The monthly sales for Amron Batteries Shd Bhd were as follows:

Month	Sales
Jan	20
Feb	21
Mar	15
Apr	14
May	13
Jun	16
Jul	17
Aug	18
Sep	20
Oct	20
Nov	21
Dec	23

Forecast January sales using the better method of the following two methods. Use MSE to select the method.

i. 3 months simple moving average method
ii. 4 months simple moving average method

(10 marks)

Continued..

b. Explain what is meant by Robust Design, giving two examples.

(10 marks)

Question 3

a. e-banking charter in CIMB bank promises to ensure that you receive only reliable and high-quality services, we deploy robust hardware, equipment and software, and engage only qualified and trained personnel. We ensure that our business methodologies comply with regulations and guidelines set by regulators including Bank Negara Malaysia.

Explain the high-quality services of CIMB in terms of any of four determinants of service quality.

(10 marks)

b. Auto pistons at Shah Alam plant are produced in a forging process and the diameter is a critical factor that must be controlled. From sample sizes of 10 pistons produced each day, the mean and the range of this diameter have been as follows:

Day	Mean diameter (mm)	Range (mm)
1	156.9	4.2
2	153.2	4.6
3	153.6	4.1
4	155.5	5.0
5	156.6	4.5

(A_2=0.308, D_4=1.777 & D_3=0.223)

i. Calculate x-bar-bar and R-bar

(4 marks)

ii. Calculate UCL and LCL values for x-bar chart and R-chart.

(4 marks)

iii. Is the process under control?

(2 marks)

Question 4

a. Explain any four major factors that firms consider when choosing a country in which to locate.

(10 marks)

Continued..

b. From the outside there is not much to distinguish the Hindustan Service Centre (HSC), the global services centre of Tesco from the scores of other MNC back-end centres in Whitefield, Bangalore. There is the standard infrastructure; a green leafy campus, an open cafeteria, amphitheatre and air conditioned buildings where engineers sit and write code alongside young college graduates who answer queries of Tesco's customers across the world.

There's a huge floor in one of the buildings, which has row upon row of machines of the kind seen at a retail checkout counter. Colourful boards hanging from the roof demarcate the section into the UK, Ireland, Turkey and so on, countries where Tesco runs its businesses. A check-out counter of a petrol pump in UK stands in a corner. The room is actually a lab and the machines that we see are called the point-of-sale equipment (or a till) in retail industry parlance. The machines are being used to test all the IT applications that support processes running in a Tesco store; from the time a customer purchases an item to the store replenishment system going right up to Tesco's distribution backend.

Spread over 10,000 sq ft and set up with an investment of £1.5 million, the lab in Bangalore is the only one that the company has in the world and is an extremely crucial part of Tesco's future. It is here that Tesco is testing its new operating model (TOM or the Tesco Operating Model) before rolling it out across the world. TOM is the £40 billion retailing giant's biggest bet so far.

Discuss the locational advantage of TESCO's IT development centre at Bangalore, India.

(10 marks)

Question 5

a. "Lean" processes are being adopted globally by organizations suffering from some level of inefficiency that's negatively affecting their bottom line. Post-recession, as the financial industry continues to resolve its credit and capital problems, many banks are now shifting their focus to improving operational efficiency.

The objective of a lean banking approach is to identify areas of waste and inefficiency within your organization and then apply proven methodologies to generate solutions. Lean middle-market banks enjoy improved customer experiences, get the most out of their staff, improve operational controls and reduce monetary waste wherever possible..

Given the narration above, what will the focus of lean banking and what are its advantages?

(10 marks)

Continued..

b. Southeastern The following set of seven jobs is to be processed through two work centres at George Printing Company. The sequence is printing and then binding. Processing time at each work centres is shown in the following table:

Job	Printing (hours)	Binding (hours)
T	15	3
U	7	9
V	4	10
W	7	6
X	10	9
Y	4	5
Z	7	8

i. What is the optimal sequence for these jobs to be scheduled? (2 marks)

ii. Chart these jobs through the two work centres. (4 marks)

iii. What is the total length of time of this optimal solution? (2 marks)

iv. What is the idle time in binding shop, given the optimal solution? (2 marks)

END OF PAPER